REMARKS

Claims 14-34, 37, 38 and 40 are cancelled without prejudice. Claims 1-13 had been cancelled previously. The remaining claims in this application, claims 35, 36 and 39, are clarified, contain no new matter, and are supported in the specification.

Claims 35, 36 and 39 as presented herein are patentably distinct over the prior art cited by the Examiner, and are in full compliance with the requirements of 35 U.S.C. §112. Changes to these claims are made, not for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103, or 112, but simply to clarify the invention and to round out the scope of protection to which Applicants are entitled.

In paragraph 1 of the present Office Action, claims 14-34 were rejected under 35 U.S.C. 112, first paragraph, as allegedly containing subject matter not sufficiently described in the specification. As noted above, claims 14-34 are cancelled.

In paragraph 3 of the Office Action, claims 14-28 were rejected under 35 U.S.C. 112, second paragraph as allegedly including indefinite terms. Claims 14-28 have been cancelled. Additionally, the Examiner objected to the terms "three-dimensional image data," "three-dimensional image model," and "three-dimensional model" in various claims. However, since the present claims do not recite these terms, Applicants submit that the claims comply with 35 U.S.C. 112, second paragraph.

Also in paragraph 3 of the Office Action, claims 15, 19, 22 and 24, 29, 33, 36 and 38 were rejected under 35 U.S.C. 112, second paragraph, because "the claims fail to provide the relationship between the *recording* beams and the parallax image train."

Claims 15, 19, 22, 24, 29, 33 and 38 are cancelled.

Amended claim 36 recites in part "sequentially recording each image of the parallax image train as an element hologram."

Since amended claim 36 does not recite a "recording beam," Applicants submit that the Examiner's rejection based upon 35 U.S.C. 112, second paragraph, is overcome. Applicants further submit that the present application supports the above-quoted limitation at, in particular, lines 6-13 of page 14. See also, page 7 (lines 12, 14-19), page 8 (fourth paragraph), page 10 (last line), page 11, (first line), line 6 of page 14 to line 1 of page 15, and page 15 (lines 7-17).

Additionally, the Examiner asserted that the phrases "rendering an image," "separate image," and "omitted portions" in various claims are indefinite. However, since none of claims in the present application recites these phrases, Applicants submit that the Examiner's objections are moot.

In paragraph 5 of the Office Action, claims 14, 16, 17, 18, 20, 21, 23, 27, 28, 30, 31, 32, 34, 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata (U.S. Patent No. 6,111,597) in view of Yano et al. (US 2002/0113865).

Claims 14, 16, 17, 18, 20, 21, 23 and 27, 28, 30-32, 34 and 37 are cancelled.

Amended independent claim 35 recites:

"Method for generating image data usable in forming a hologram comprising the steps of:

generating two-dimensional image data;

generating image data of a stereo model including image data representing at least a portion of an actual three-dimensional object;

producing a combined image by combining said two-dimensional image data onto said image data representing the portion of the three-dimensional object; and

generating a parallax image train based on said image of two-dimensional data combined onto said image data representing the portion of the three-dimensional object, thereby generating a parallax image train from which said hologram is formed." (Emphasis added).

An example of the present invention as set forth in, for example, amended claim 35, is well-illustrated in Figs. 5 and 6, and clearly explained at, for example, line 17 of page 15 to line 7 of page 17, of the present application. As shown in Figs. 5 and 6, a first image data generating

means, photographic unit (5), generates two-dimensional image data (57) representing, for example, a face having eyes, nose and mouth. A second image data generating means, image source (4), uses known computer graphic techniques to generate image data of a stereo model (56) including image data representing at least a portion, that is, the face <u>without</u> eyes, nose and mouth (56a), of an actual three-dimensional object.

In Figs. 5 and 6, image synthesizing means (51) uses computer graphic techniques to produce a combined image (58) by combining two-dimensional image data (57), that is, the face having eyes, nose and mouth, onto the image data representing the portion of the three-dimensional object, i.e., the face without eyes, nose and mouth (56a). Subsequently, the parallax image train generator (52) generates a parallax image train (59a, 59b, 59c) based on the image (58) of two-dimensional data combined onto the stereo model image data representing the portion of the three-dimensional object (56a). It is this parallax image train (59a, 59b, 59c) from which a holographic stereogram, or hologram, may be subsequently formed.

The Examiner asserts that Tabata discloses a device "to produce or *synthesize* a train of parallax images (c, of Figures 36 and 38) (please see Figures 1, 2, 36 and 38, columns 4, 9, 10, 27 and 28)," and that "background images are inserted and combined to the stereo image model (please see column 27, lines 37-40)."

Although, Tabata, in Fig. 3, mentions "generating <u>two pieces of two-dimensional image data</u>, necessary for stereo viewing of a plurality of <u>stereo-modeled objects</u> in a virtual space with three-dimensional space coordinates set therein," (emphasis added; see line 55 of col. 10 to line 14 of col. 11 of Tabata), Tabata fails to disclose specifically "generating a parallax image train based on said <u>image of two-dimensional data combined onto said image data representing the portion of the three-dimensional object</u>, thereby generating a parallax image train from which said hologram is formed" as in amended claim 35. As for Figs. 36 and 38 cited by the Examiner,

Tabata mentions merely a first "piece of two-dimensional image data," and a second "piece of two-dimensional image data," inserted therein (lines 26-27 of col. 10; lines 61-64 of col. 28). Consequently, amended claim 35 is distinguishable from Tabata.

Also in paragraph 5 of the Office Action (page 7), the Examiner asserts that "Yano et al teaches that one image can be pasted to another image to create desired image combination effect, (please see columns 1 and 7)." Although Yano mentions, at paragraph 89, that a "three-dimensional model...is generated without complicated operation, by pasting...images photographed by a camera to a three-dimensional model as a texture," such three-dimensional model is not used as basis for generating a parallax image train, as in amended claim 35. Instead, Yano discloses "generating a virtual image by arranging the three-dimensional model...in a predetermined three-dimensional coordinates system and projecting the [model] to a virtual image surface" (see claims 13-19; and Figure 6, of Yano). Thus, Yano fails to disclose, in particular, "generating a parallax image train based on said image of two-dimensional data combined onto said image data representing the portion of the three-dimensional object."

Additionally, at page 6 of the Office Action, the Examiner acknowledges that Tabata and Yano "do not teach explicitly...a hologram forming apparatus or [that] the image data is usable for forming a hologram." The Examiner contends, nonetheless, that:

> "recitations of intended use in the preamble have not been given patentable weight because it has been held that a preamble is denied the effect of limitations where the claim is drawn to a structure and the portion of the claim following the preamble is a *self-contained description* of the structure *not depending* for the completeness upon the introductory clause...In this case, the body of the claims is drawn to image data generation that does not rely on the feature of usable in hologram recording."

Notwithstanding the Examiner's contention, however, Applicants submit that since neither Tabata nor Yano disclose "generating a parallax image train based on said image of two-dimensional data combined onto said image data representing the portion of the three-

dimensional object, thereby generating a parallax image train from which said hologram is formed," claim 35 as amended is distinguishable over the combination of Tabata and Yano.

In paragraph 6 of the Office Action, claims 15, 19, 22, 24, 25, 26, 29, 33, 36, 38, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata and Yano, in view of Benton (U.S. Patent No. 4,834,476).

Claims 15, 19, 22, 24, 25, 26, 29, 33, 38 and 40 are cancelled.

Amended claim 36 recites in part the "method according to claim 35, further comprising...sequentially recording each image of the parallax image train as an element hologram."

Since the Examiner does not rely on Benton to cure the above-described deficiencies in Tabata, Applicants submit that amended claim 36 dependent from amended claim 35, is therefore distinguishable over the combination of Tabata, Yano and Benton for at least reasons similar to those previously discussed.

Amended independent claim 39 recites a "holographic recording medium having recorded therein element holograms corresponding to a parallax image train produced from a synthetic image produced by combining two-dimensional image data onto stereo model image data representing at least a portion of an actual three-dimensional object." (Emphasis added).

The Examiner acknowledges that Tabata and Yano "do not teach explicitly to use the parallax image train formed by the stereo image forming apparatus to record hologram elements," but states that "Benton teaches that a series of images having different perspective views are being projected to the recording medium (44) sequentially as the *object beam*, (please see Figures 1 and 9). The object beam is then interfered with a reference beam to record a hologram element sequentially at the recording medium." Although Fig. 1 of Benton shows an alcove hologram printer, and Fig. 9 shows an imaging technique in which a view is predistorted

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for alcove display, neither of these figures nor the supporting text of Benton disclose, particularly, "element holograms corresponding to a <u>parallax image train produced from a synthetic image produced by combining two-dimensional image data onto stereo model image data representing at least a portion of an actual three-dimensional object</u>," as in amended claim 39. Consequently, Applicants submit that amended claim 39 is therefore distinguishable over the applied combination of Tabata, Yano and Benton.
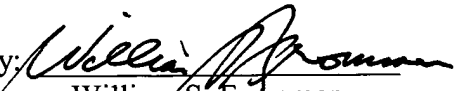
For the foregoing reasons, Applicants submit that the present application is in condition for allowance. An early notice to this effect is respectfully solicited.

The foregoing comments concerning the disclosures in the cited prior art represent the present opinions of Applicants' undersigned attorney and, in the event, that the Examiner disagrees with any such opinions, it is requested that the Examiner indicate where in the reference or references, there is the bases for a contrary view.

Please charge any fees incurred by reason of this response to Deposit Account No. 50-0320.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicants

By: William S. Frommer
Registration No. 25,506
Tel. (212) 588-0800